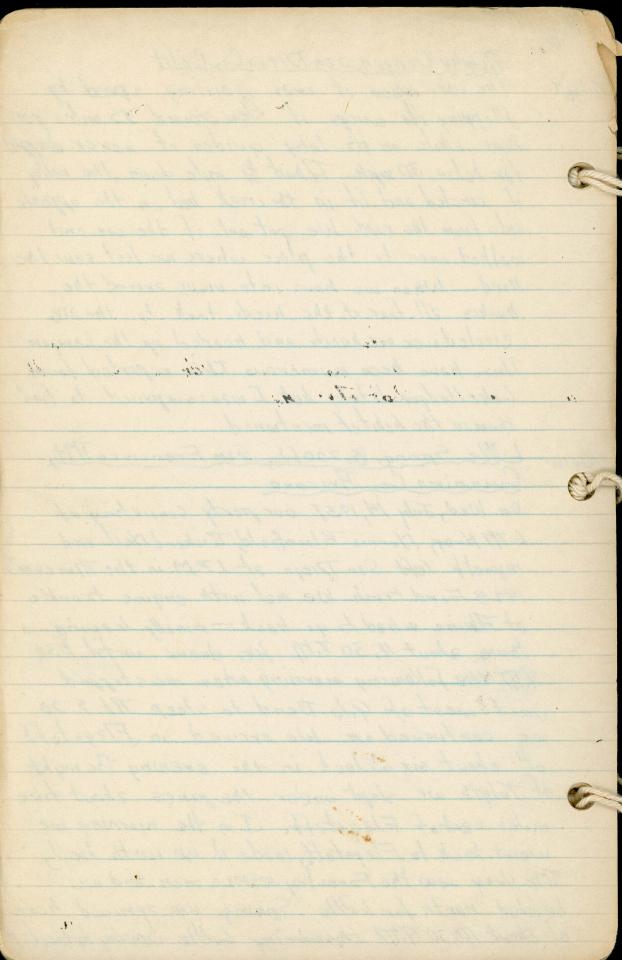
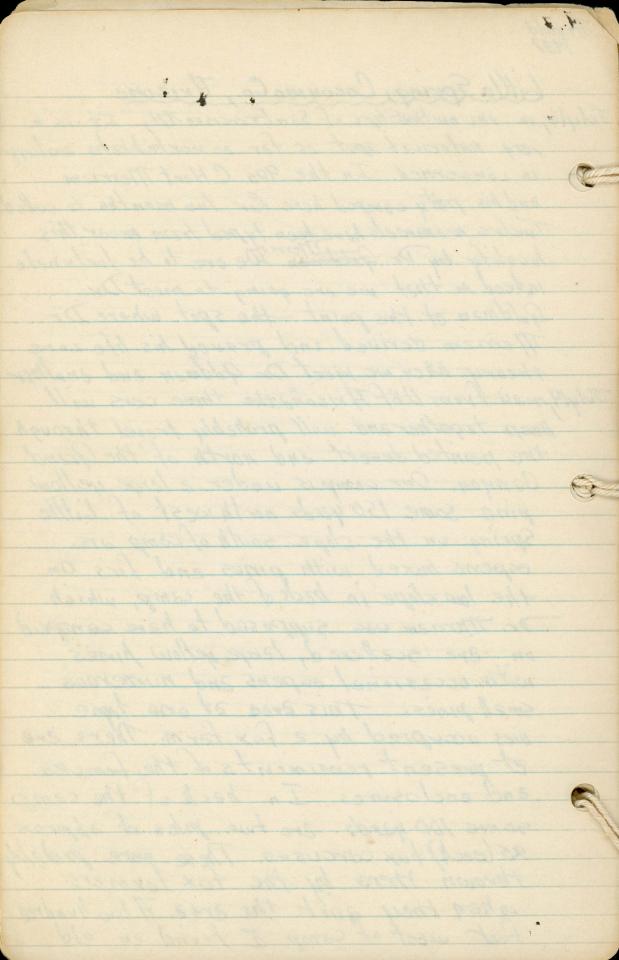
Lee W. Arnold Field Notes

July 9, 1937 - August 9, 1937

Leroy W. Arnold Hrnold 1937 Murphy Cznyon, Sen Diego Co, Celit. the cer. When it was gaining speed by Jul49 flapping its wings it then around 35 miles per hour while on its long quides it never drapped for below 30 mph. It hat if mile down the valley if circled and let in the creek had on the opposite side from the road. We got out of the car and welked over to the place where we last saw the hird. When we have into view around the hushes all four of the hirds took to the elv, circledover our heads and headed up the canyon. There have been numerous Ihis reported from Lake Hodges lately but I was surprised to find them in the helitet mentioned. Little Spring, 8, 200ft, Sen Francisco 11/1. JU1416 Coconino Co. Hrizona On Wed., July 14, 1937 our party consisting of L.M. Huey, Horris Bloomfield, Bicherd Heil end myself left Sen Trigo at IP.M. in the Museum's 1928 Ford truch. We met with engine trouble of Alpine + had to go hock - finely leaving four shout 4:30 7.11. We drove until 1:30 A.M. the following morning when we stopped just west of 91/0 Bend to sleep. At 5:30 we continued on. We exrived in Flegsteff et about six o'clock in the evening. The night of July 15 we slept under the pines thout tive miles exist of Flegstoff. In the morning we went buch to Flegsteff, lorded up with food, Mr. Huey saw the Forestry service men and we he eded north for Little Spring. We arrived here of about 10:30 7.77. this movning buttle Spring is located



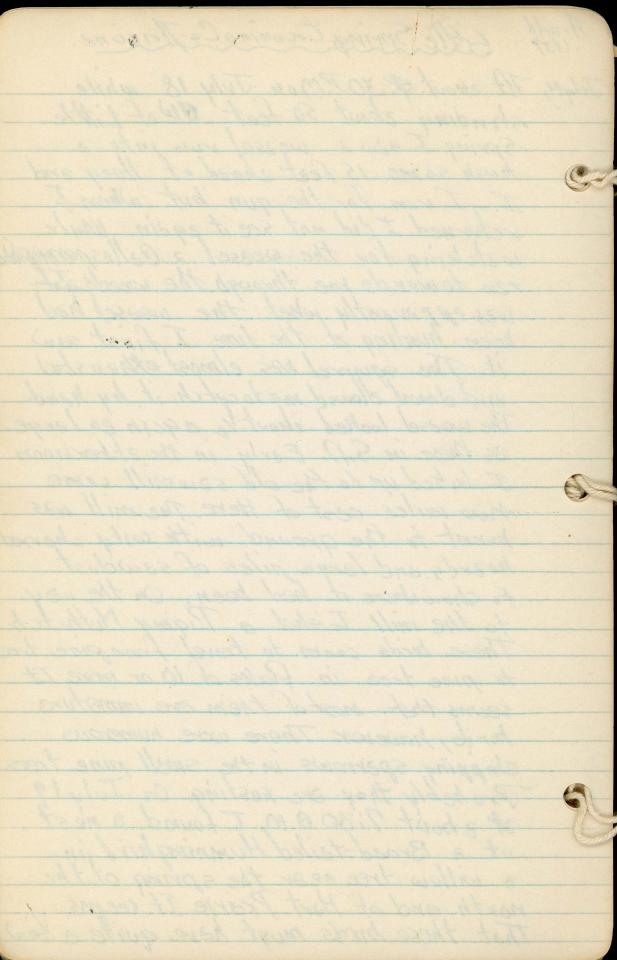
Arnold Little Epring, Coconino Co. Avizone Tulylo, on the northwologe of San Francisco 17th, It is a very unstoricet spot is for as vertebrate zoology is concerned. In the 90's C. Hart Merriem end his porty comped here for two months to collect. Twelve mammals have been typed from mear this locality by Dr. golden. We are to be fortunate indeed in that we are going to meet Dr. Goldman of this point - the spot where Dr. Merriam derived and proved his life zone theory. When we meet Dr. Addmen and another July19, man from lot Anzone the three cars will peep together and will prohably travel through the peinted desert end north of the Grand Canyon. Our camp is under a large yellow pine some 150 yerds north west of Little Spring on the glope south of camp are espens mixed with pines and firs on the low slope in back of the camp, which Dr. Merriam was supposed to have camped on tre scattered, large yellow hines with occessional aspens and numerous small pines. This area at one time wes occupied by a for form. There are ct present reminents of the fences and enclosures. In back of the camp some 100 yards are two piles of approx 25 (each) fox carcusus. These were prolably thrown there by the fox farmers when they guit the area. A few hundred feet west of camp I tound in uld



Annote 1937 Little Joring, Cocourno Co, Arizona. July19, corcus of a very deed Mephitus. This is
probably Mephitus estor which is typed at this locality on the night of July 16, I set out & line of 50 trops. 16 of these were in the merdow south of camp while the rest were clong the past) side of the large merdow some is wife from camp. I caught 26 Peromyscus mamiculatus 11 2d. 8; 6 2d. 2; 9 inm8 Although some of the sets in the mecdow seemed good for Microtus I did not catch any. On the night of July 10 I set 65 traps along the creek in Hart Prairie many of these were doing the edge of the water white others were in mecdownice runs on the flat damp low ground near the water I ezught 16 Peromyscus and 3 Microtus. of the 3 Microtus two were short-telled 2nd one was longtailed. On the night of July 18 I egain set in this locality estering 6 Peromyseus and 3 Microtis (211 short triled). On the evening of July 18 we sew an edult & Odocorlas in a grove of espen about I mile from oemp on the main road. It's harms antlers were in valuet and hat two prongs on either side. We stopped the car for severel seconds and natural it. After storing at us for a time it slowly van zweny through the espens.

In the

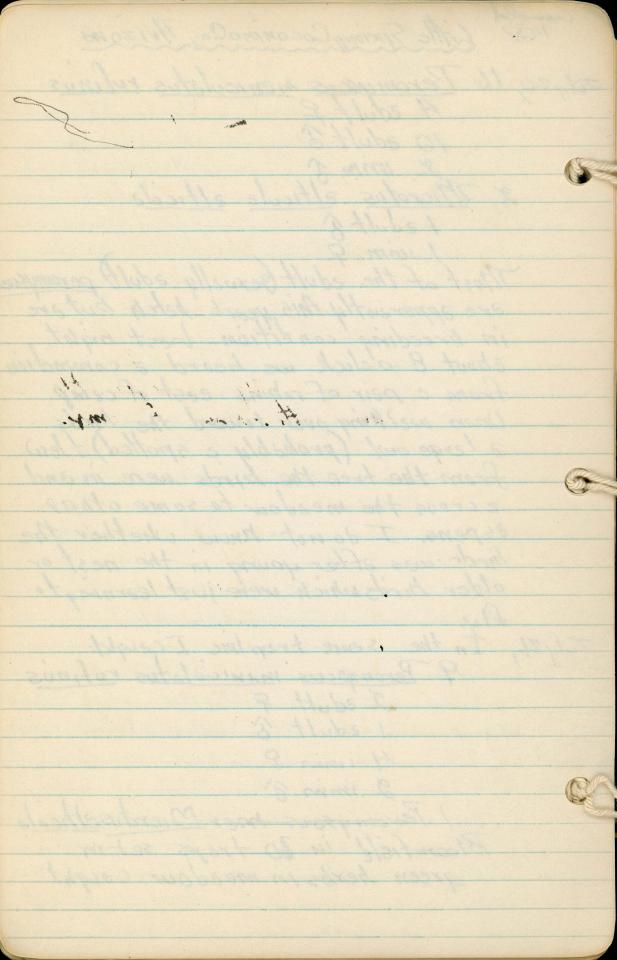
Arnold Little Spring, Coconino Co. Arizona July19, At shoot \$:30 P.Mon July 18 while standing shout so teet wof Little Spring I saw a wessel vun into a hush some 15 feet cheed of Huey and I. I van for the gun but when I veturned I did not see it zgain. While wetching for the weesel 2 Cellospermyphie ren towords me through the weeds. It was approvently what the wease had been hunting of the time I first sow It. The aguirrel was almost exhausted The weesel looked short a again es large 25 those in S.M. Early in the afternoon I hihed up to the old sewmill some two unles east of there. The mill was hurnt to the ground with only chance hords and large piles of sewdust to showwhere it had been. On the way to the mill I shot a liging Nuthetch. These birds com to travel from pine tree to pine tree in flaks of 10 or more. It seems that most of them are immoture birds, however. There were humerous chipping, sperrows in the smell pine from. Probably they are nesting. On July 19. et about 7:30 A.M. I found a nest of a Broad-tailed Humminghird in a willow tree near the spring of the north end of Hart Prarie It seems That these birds must have quite a few



Arnold Little Spring Coconino Co, Arizona July19, uests in this smell grove of willows from the humminghird ectivity. The nest had two white (eliptical), eggs in it and was built of a white downy substance. It was about, 4 feet from the ground and in a position that would get the sun part of the day (at nown) I noticed several hirds going through a meting procedure similar to the If lem Hummer of the boy region on the night of July 18 Thr. Hugy worke me up to listen to the spotted dwls Calling in the aspens. They called similar to a dog bark. On the ovening of July 11 I heard them once more in the aspen grove. July 20, Last night I set out 73 mouse trops near the spring at Little Spring. 30 of these were in the green shruhs around and within a few feet of the spring while the rest ere spring for shout 200 yerds. this fence line consists of large notes about every 15 feet with a ditch running along the base of them. This ditch showed signs of much weer from animals running along it. I set traps of every other pole where sign looked favorable and at every fourth pole where it did not look so fevereble. This morning I had

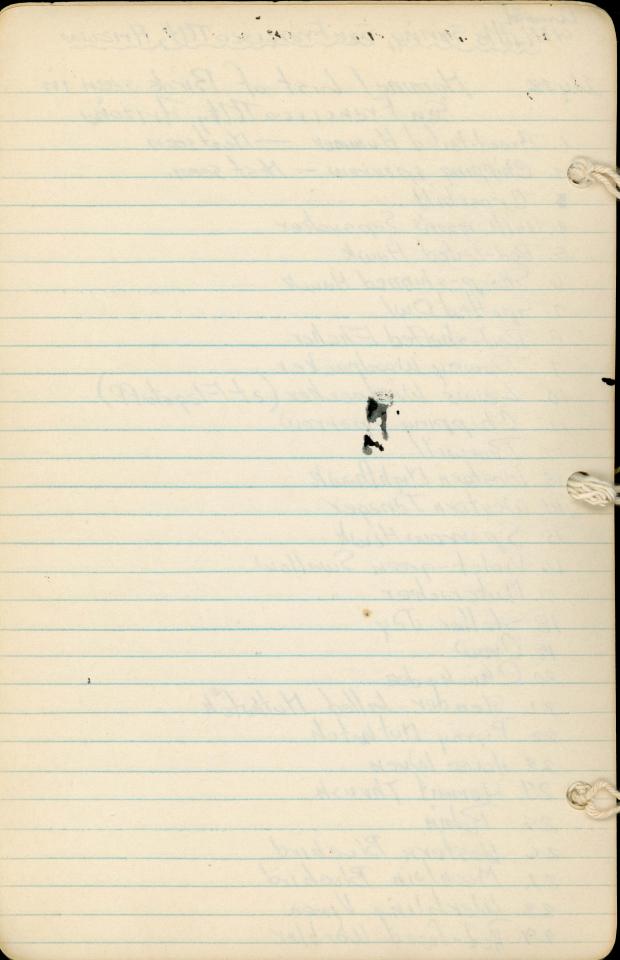
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amold little Spring Coconino Co. HV12010 JULY20, 16 Peromyseus meniculatus rufinus 4 adult 8 2 imm. E. 2 Microtus elticole elticole 1 edult 8 1 imm. 9 Most of the edult (sexuelly adult) peromysous are apparently this years batch but are in breeding condition best night shout 8 o'clack we heard a commotion from a pair of robins east of camp. Unon welking over toward the hirds a large owl (probably a spotted) flew from the tree the birds were in and z cross the medow to some other 25 pens. I do not know whether the hirdr was efter young in the nest or older hirds which were just learning to Toly 21, In the seme trapline I caught:
9 Perompous maniculatus rufinus 2 edult 8 4 1min & 2 mm 6 / Keromysous mor Micratuseltscole Bloomfield in 60 treps set in green herbs in mecdow cought:



amold July 21, 11 Peromysous moniculatus 4 éd. 8 3 ed. 8 2 1mm & Zimm & Heil caught:
12 Peromyseus meniculatus 52d. 8 3 2d & 3 imm 8 1 imm 8 in espens; hushy undergrowth weeds etc. East of camp. I Goved 4 2d. 9; 4 2d 8; 11mm. 9, 1, mm8 in elcohol. They are as follows 300 & Peromyseus 152-66-19-18 (es from moter) 301 8 152-62-20-19,5 302 3 11 144-55-19-18 3038 151-63-19.5-17 3049 154-61-19-20 3059 168-72-20-20 3068 158-67-19-19 3079 155-66-18-19 308 4 mm. 127-53-18-17 3093 imm. " 133-62-20-17,5

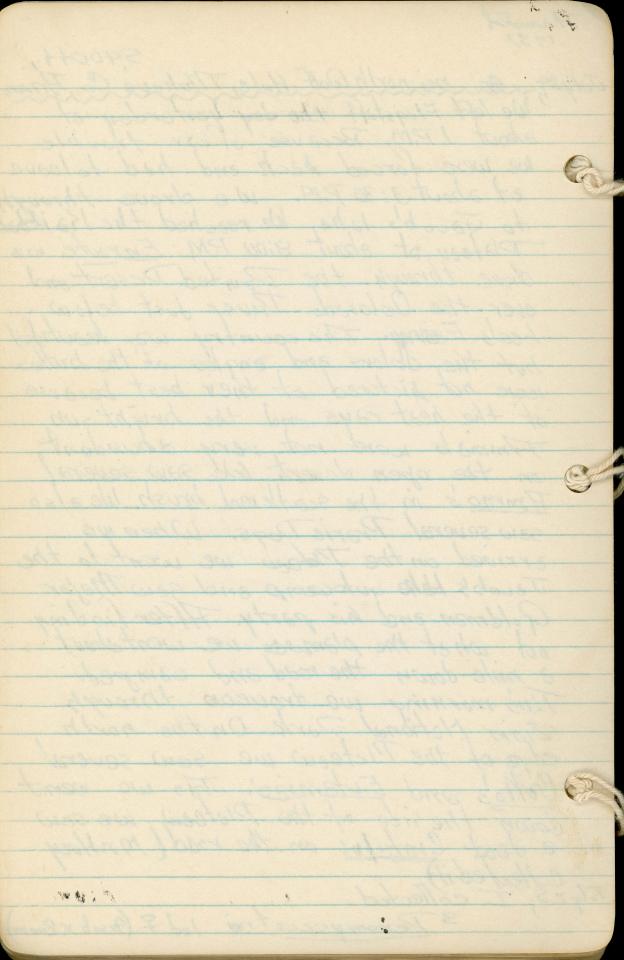
arnold 1937 Little Spring, San Francisco Tit, Arizona Hominel List of Birds seen in 2/422 Sen Francisco Mt. Hrizona. 1. Broad-tailed Hummer - Mestseen 32. Chipping spervow - Mest seen. 3 Crossbill 4. Williamson's Sapsucker 5. Tred-tailed Howk le. Sharp-shinned Howk 7. Spotted Owl B. Red-shafted Flicher 9. Downy Woodpecker 10. Lewis Woodpecker (2+Flegstoff) 11. Chipping Sparrow 12. Poorwill 13. Western Nighthawk 14. Western Tonger 15. Sparrow Hawk 16. Violet-green Swellow 17. Mutcracher 18. Steller Uzy 19. (row 20. Chickadee 21. Flender- hilled Huthotch 22. Pigmy Nuthotch 23. House leven 24. Hermit Thrush 29. Ruhin 26. Western Bluebird 27. Mountain Bluebird 23. Workling Vired 29. hed-faced Worhler



arnold Little Spring, Sen Francisco Itt., Flrizona 30. Hudukon Werbers (Blechtronted) 31. Mzcgillivrzy (darbler (Tolmie) 32. Mezdowlerk 33. Black-headed Grosberh 34. Evening Grosbeak 35. Pine Sishin 36. green-toiled Towhee 37. Spotled towhee 38. Arizpha Junco 39 Western Wood-pewee 40. Band-tailed Pigeon 41. Mourning Trove This afternoon at about 2:00 P.N. IMr. Goldman errived in comp. He was in a 193% Plymath and us accompanied by his son Luther. He discussed his plans with Mr. Huey for some time and then they left for 1= legstaff. We are to meet, them for Zion Metional Perh. This evening I collected a shull of the Mephitus estor I had seen previously.

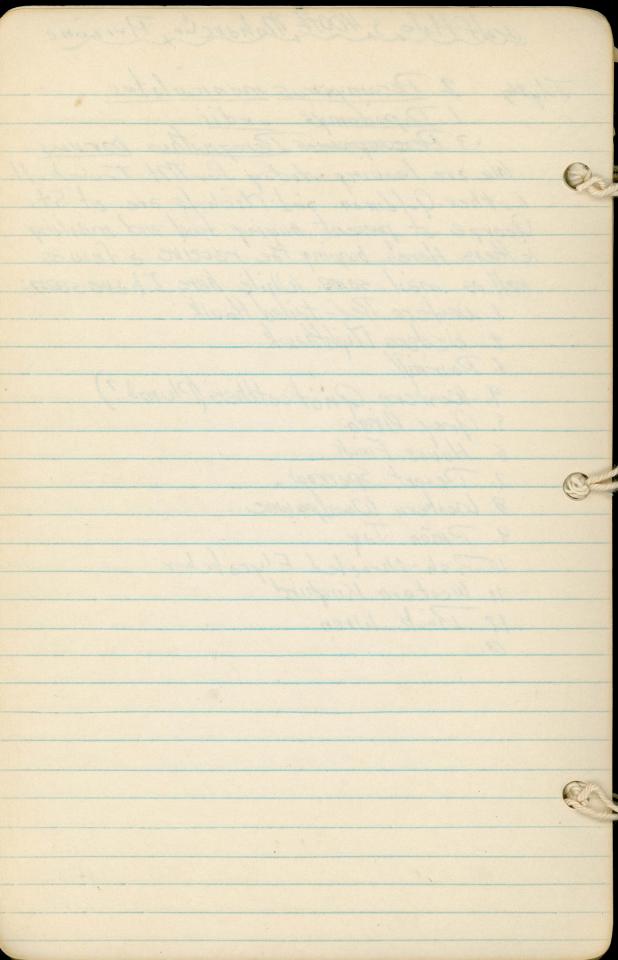
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Arnold 1937 540011. July 19 minorth Wolf Hole Moheve Co. Finan We left Flagstoff the day yesterday of about IP.M. Because of car trouble we were forced back and had to leave 21 about 3:30 P.M. We drove through to Jacobs lake, We reached the Kaitson Platecu at about 8:00 P.M. Enroute we over the Coloredo River just below. Lee's Farmy. The country was beautiful but the colors and angles of the butter were not pictured at their best because of the heat rays and the bright sun Animals were not very abundant on the open desert we saw several Ammo's in the scattered brush. We also sew several Prerie Dogs. When we crrived on the Theory we went to the Jecob's Lets gutowemp and saw Major Goldman and his party. After finding od what the planwas we went about a mile down the road and camped. This morning we droveon through Zion Metional Park. On the north edge of the l'Interw we sow several schos and Entamies. He we went down the side of the Plateon, we saw a deat Crotalus on the road (Mr. Hvey Toly 25, I collected:
3 Recomyscus tria 12d. 7 (4emb. x 8mm)



and Ami AWolf Hole, 5, 400ft, Mohove Co, Hrizons Merognethus formosus) July25, 1200 ; (1mm) 2 Perognethus parvus 1 Meotoms lepido 7 The Meatoms and & Peromysous true! were caught on the ME Face of an outcropping of rocks shout 1/2 mile SW of camp. The Perognathus tormosus was caught on the side hill near the hase while the remaining Perognothus and Peromyscus were collected on the flat land radicting from the base of the hill. The Perognothus privus is the 3rd vecord for the state of Arrivona according to Mejor Goldmen. Bloomfield and Mil shot several specimens near here, these included: I grey Vegro; I Ash-Throsted Plycetcher; I Western Kingbird; 2 Gnetortches / Collared Lizard; / Crotophytes. dout 2 miles south of the press. The vegetalin congists of Tunipers and sage Here and there are cactus plants. On the slopes of the hills are Piñon trees. Yesterday we tried to outtit in St. George but were forced to wait until Monday Recover of a Mormen holiday. Tomorrow we will procede toward the TIH. Trumbul region. July 24, This morning we went around to the traps but had no gophers. In 60 mouse traps set on the flatland south of camp we cought:

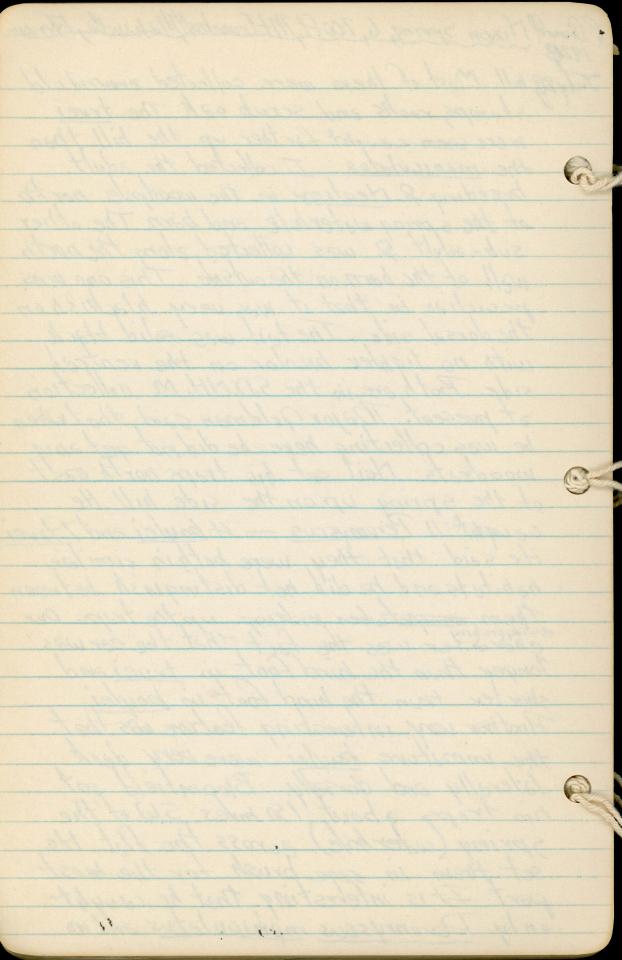
Not Hole 5, 400H. Mahere Co. Hvizone July 2 Peromysous maniculatus Dipodomys ordii 3 Peromysous Perognathus parvus We are leaving today for TH. Trumbull. Luther Goldmen and Michals are at St. George at present buying tood and mailing letters. Here's hoping the receive a few as well as neil some. While here I have soen: 1. Western Red-toiled Howk 2. Western, Mighthawk 3. Poornill 9. Western Guct catchers (Plumb?)
5. Grey Upo 6. House Finch 1. Desert Sparrow 8. Western Woodpe wee 9. Pinon Jay 10.7-, sh-throwted Flycetcher
11. Western Kingbird 12. Hock Wren



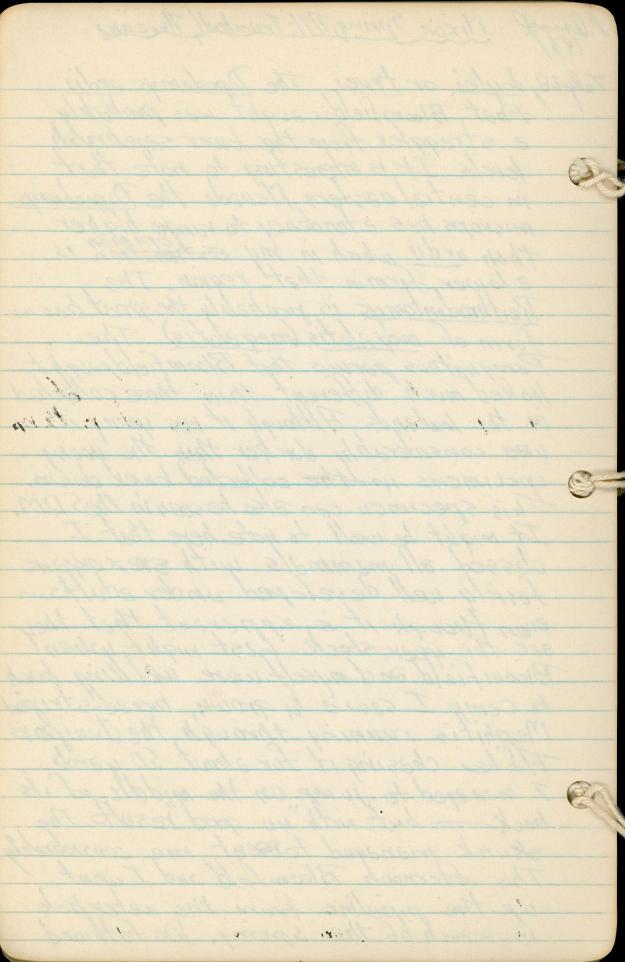
Mickson Spring, 6,700ft, Mt Trumbull, Mohovelo, Hrizon July28, Past night we set out 60 traps apiece: Meit Caught: of Peromyscus trues 4 20 7; 2 imm 8; 1 imm 9 4 Peromysuus hoyles 12d 8; 12d.4; 1imm 4; 11mm 8 Bloomfield cought: 17 Peromysius meniculatus 8 edult & 8 edult 8 (adults & subodults 1. Reithrodontomys megalotis ed. 8 1 Dipodomys ordii - & edult. 1 Perognethus pervus (?) } I cought: z. Mectome lepida (?) 120.0 1 imm, & (tail solid black) 4 Perunyacus truei Z 26 8. 1 imm & 1 imm ? 8 Peromyscus maniculatus 6 20 6 2202 of the spring about 100 yards and van them west along the lower edge of the

4,8 2 ATM 300 the service 24.

Paul Hixon Spring, 6, 700 ft. Mt Trumbul Mahauda, Finzan July 28, hill. Most of them were collected aroundold stumps, rocks and scrub och. The truei were seen caught for ther up the hill then the maniculatus. I collected the adult breeding & Heatoms in the woodpile north of the spring waterhole and barn. The other sub-adult & was collected, along the north well of the born on the outside. This one was peculiar in that it was very blackish on the dorsel side. The tail was sold black with no lighter bicolor on the ventrely side. Both are in the S.D. M.H. M. dollection at present. Major Goldman said, that when he was adjecting here he did not get any woodrats. Heil set his traps north east of the spring up on the side hill. He caught 11 Peromysous. - 4 hoyles and 7 trues. He said that they, were bothing similar habitets and he did not distinguish between Them is yetwhen picking up the traps. Our distinguishing was the fact that the earwas longer than the hind foot in true i and show ter then the hind foot in boylei. Hnother very interesting testure us that the immeture boylei were very firk leterally and dorsally. Bloomfield set his trops about 150 miles SW of the spring (waterhole) guross the flat. He set them in sage brush for the most part. It is interesting that he caught only Peromysous maniculatus and no

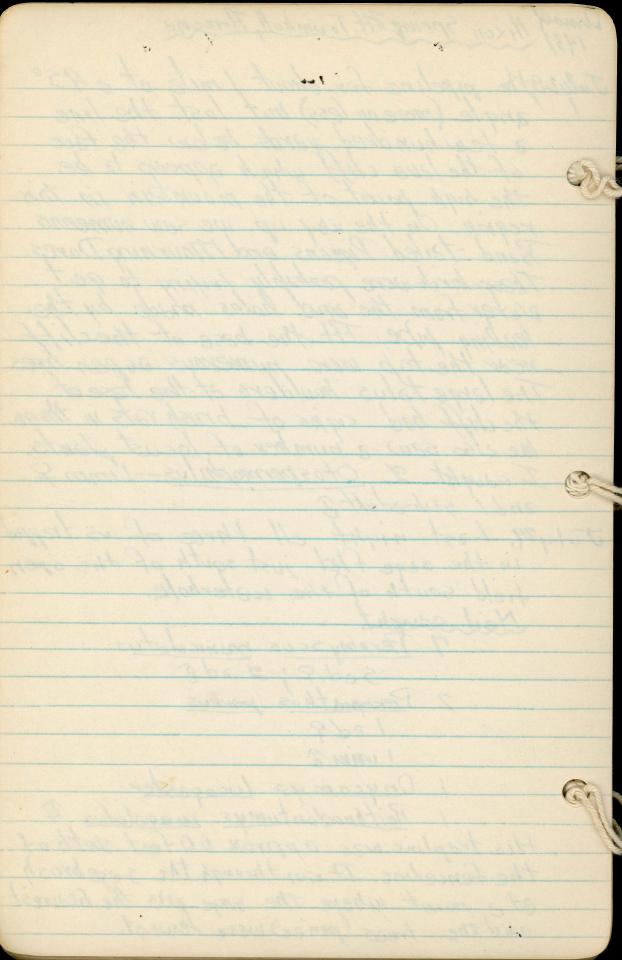


S. amod Hixon Spring, Mt. Trumbell, Arizona July 18, doylei or trues. The Dipodomys ordis that Bloomfield caught was probably a straggler from the lower sagebrush, levels. It is interesting to note that in central eastern, Hevada the Dipochmys microps has a tendency to range higher then ordi which in my estimation is a lower, formin that region. The Resthrodontomys is probably the great basin form of megalotis (megalotis). The Perognethus porves that Bloomfield cought looked much different than those collected in the bulenes. Although it was young it was considerably dar ker then the young eperimens in the collected buer down. This specimen can also be seen in the S.D.M. It might be well to note here that I classed all mammals with spexogens fairly well developed under adults even though it is apparent that they ove this year stock. Gest night, when I Bloom field and myself were walking book to camp I saw a 'y grown, hroad-striged Mephitis running through the Junipers. Flater chasing it for about 50 yards I managed to jump on the middle of its back - but with no good results. The sonk managed to sent, me considerably. This afternoon Bloomfield and I went in search of the spring. We followed



amold Hixon Spring AH. Trumbull, Avizona July 18 the pipeline for shoot I mile at a 450 angle (more or less) mt lost the line of the love cliff which appears to be the high point of the mountain in this region. On the way up we saw numerous Bend triled Pigeons and Mourning Doves. These hirds were probably trying to get water from the mud holes made by the tecking pipe It the base of the cliff near the top, were numerous aspen trees. The large talus houlders at the base of the diff had signs of brush rats in them. We also saw a number of Igaust plants.

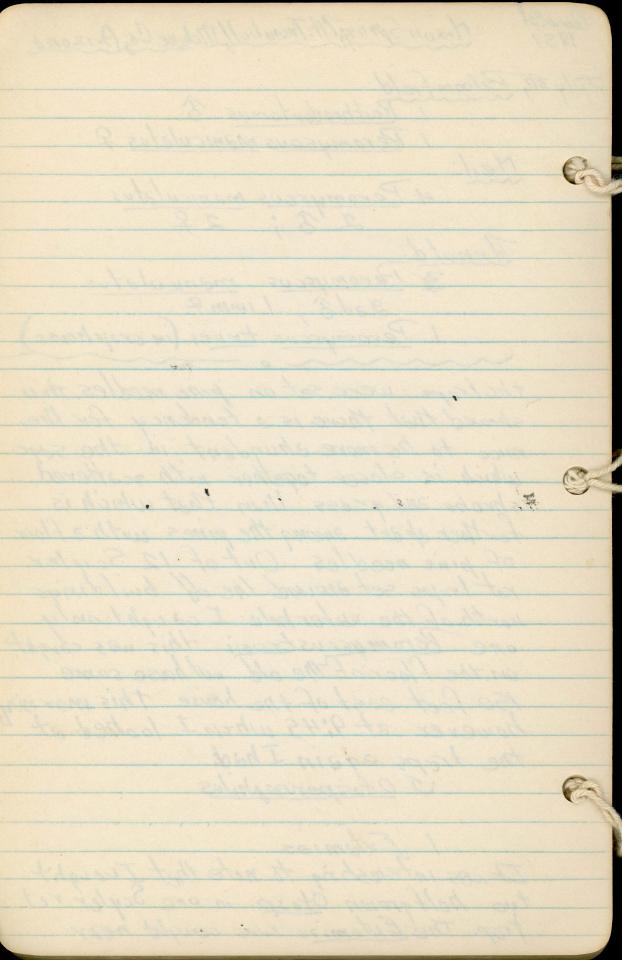
I cought 2 Otospermophilus—limm. and sub-edult 3 July29. Last night all three of us trapped in the sage flat just south of the open field south of the waterhole. Neil cought. 7 Peromyscus meniculatus 52d. 9; 22d8 2. Peragnothus porrus 1209 1 Unycomys lucogester 1 Keithvodontumys megalotis & His trapline was approx 60 feet south of the fenceline. It ran through the sagebrosh et a point where the sage ards the heaviest and the trees (pines) were tewest.



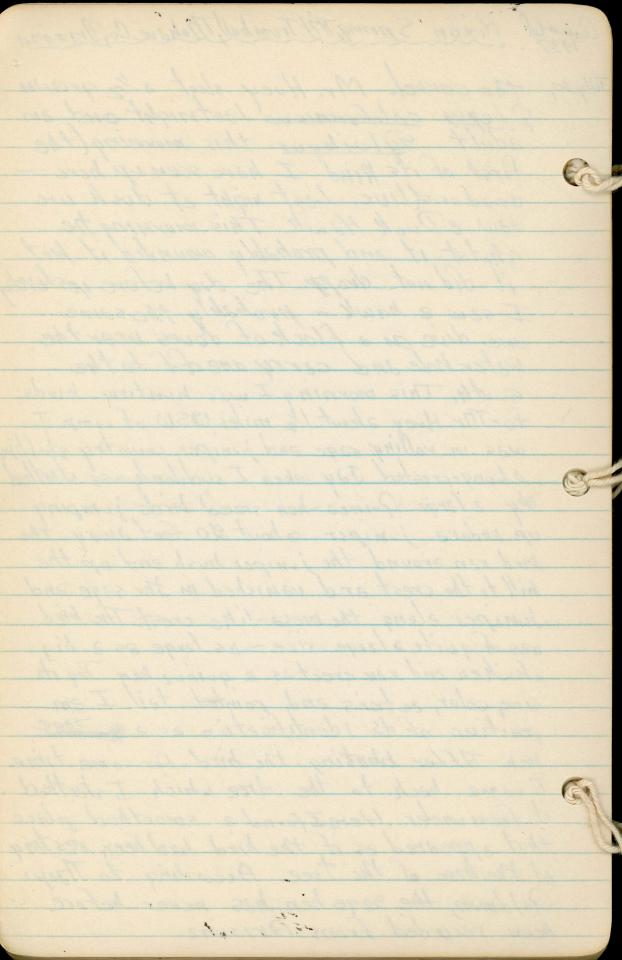
Twon Spring MH. Trumbull, Mohare Co., amold 1931 Bloom field cought:
3 Perunyacus maniculatus-/2019 Hig tropline was along the fenceline at Intervels of every 5 paces. Compare thic cetch with that of the provious night Ecoupht: 9. Peromyscus maniculatus 3 ed &; 5 ed 9; 1 imm & 1 Peromyscus truei q My trepline was 50 paces south of the fence - 25 shown on map for the most part my traps were in sagebrush near the trees wunder them. The truei was trapped the fartherst west of any. It was about 50 feet from a large pile July30, we set out our trops at intervals of every Spaces, south of where we tropped the previous hight. Bloomfields were 15 paces south of fence, Meils were 100 paces south" " Mine were all tropping in a habitatet of less sage and more pine than on the previous night. Many of

Trumpall Mahne To 14 to wood M. HARLE DOWNER

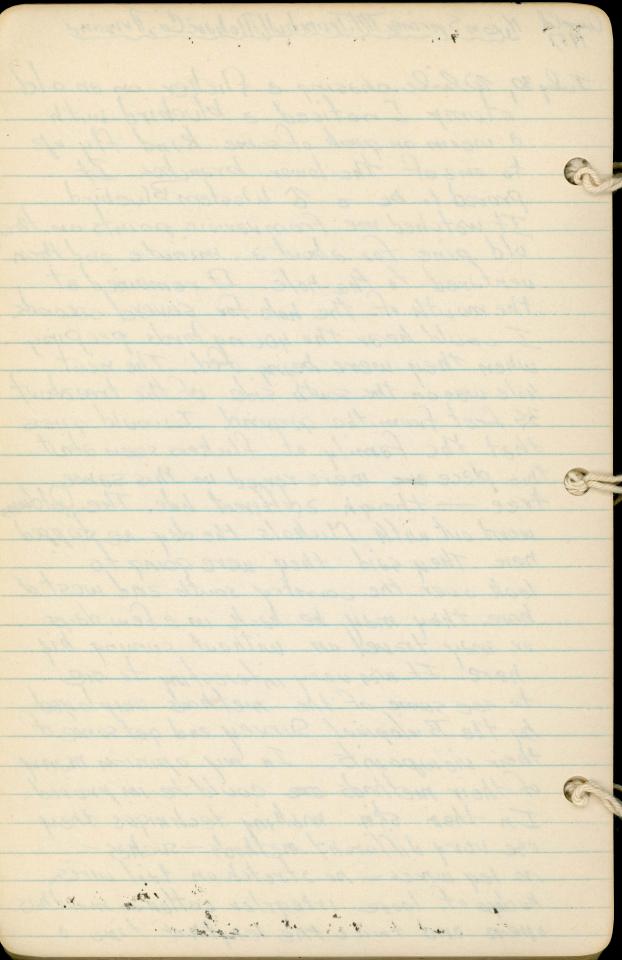
amold 1937 Mixon Spring Ht. Trumbull, Mohove Co; Arizona 1 Reithrodontomys &
1 Peromyscus maniculatus 9 July 30, Bloomfield: 4 Peromyscus maniculatus 28; 29 Arnold: 3 Peromyscus mankulatus 2 ad 8; 1 imm 7 1 Peromyscus truei (in craphouse) the traps were set on pine needles. This showed that there is a tendency for the mice to be more ahundent in the sage which is closer together with scattered shrubs and gress than that which is forther exert among the pines with a floor of pine needles Out of 12 Scyler ret trops set around the of buildings north of the weterhole I cought only one Veromyscustruoi this was cought on the floor of the old outhouse some 150 feet east of the house. This morning, however at 9:45 when I looked at the trops eggin I had. O tospernophilus 1 Evenias It was interesting to note that I wought two holfgrown Otosp. in one Scyler ret trop. The Externize was cought near



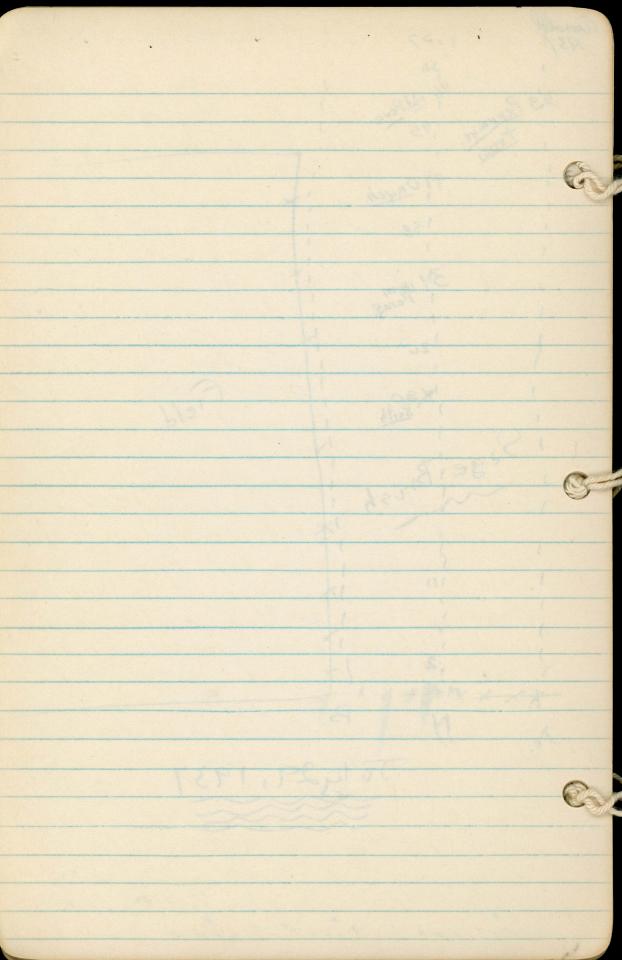
anold Mixon Spring, Mt. Trumbull, Thoheve Co, Arizono The correl. Mr. Huey shot 2 '2 grown July 30, I bepus celifornicus lestnight and an first of its Rind I have seen up here desdordlive. Lest night et dush we sow & Duck Howk. This morning the shotet it and probably wounded it but I saw a hawk - probably the same one dive as a flock of doves near the water hole and carry one of f to the gouth, This morning I was hunting hirds for Mr. Huey about 1'2 miles (35W of camp. I was in rolling sage and juniper country stalking a Long-crested Jay when I suddenly was startled by a large Quines - hen sized birds jumping up under a juniper about 20 feet away The bird ran around, the juniper bush and up the hill to the crest and vanished in the sage and juniper along the mesa-like crest. The bird was of quite alarge size - as large as a hig whichen and van exectes a quince hey By its positive of its Identification as a Scape Hen. After blating the hird for some time I come back to the tree which I startled it from under. Here I found a smoothed place that appeared as if the hird had been resting of the base of the Tree. According to Major Goldman, the sage hen has never before been recorded from Arizona-



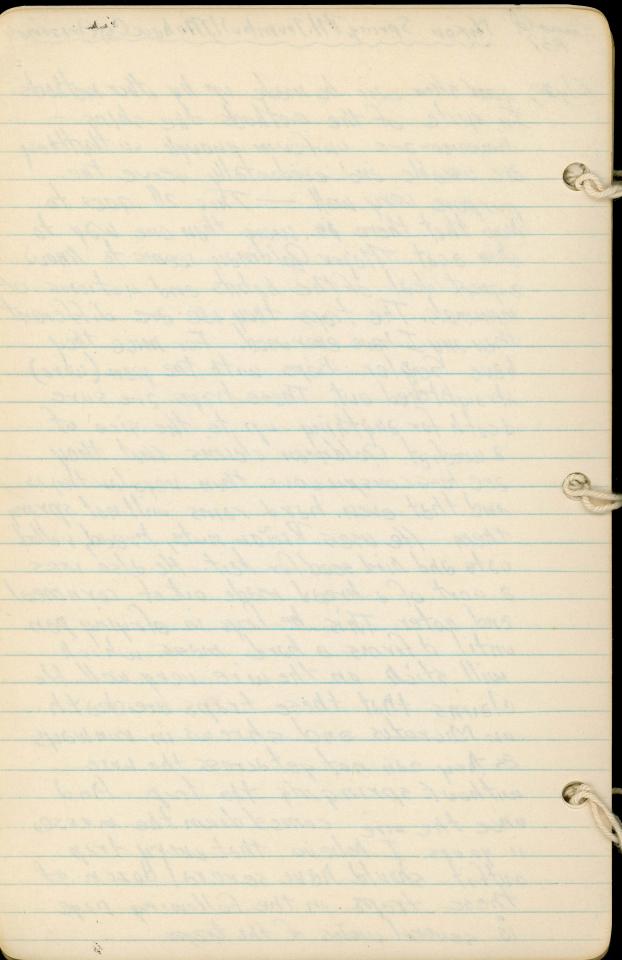
anold Mixon Spring TH. Trumbull, Mohere Co, Hrizone July 30, While chasing a flicker on an old stump Inoticed a bluebird with a worm or grob of some kind fly up to one of the lower branches. It Proved to be a & Western Bluebyrd. It watched me from various points on the uld pine for about a minute and then ventured to the hole. It remained at the mouth of the hole for several seconds. I could hear the young hards peeping when they were being ted. The nest hole was on the south side of the tree dout 35 feet from the ground I would quess that the family of flickers seen short this place were reised in this same Free - though a different hole. The folding went out with Michols the day we stopped here. They soid they were going to look over the country south and west of here they may, be back in a few days or may trevel on without coming by here! It was very interesting to me to see some of the methods employed by the Bulogical Survey and get some of their viewpoints. In my opinion many of their methods are could be improved In their skin making technique they use very different methods - suches no leg wires - no stretch on toil wires hodres of loose irregular cotton-mouthes open and twice the length of time a



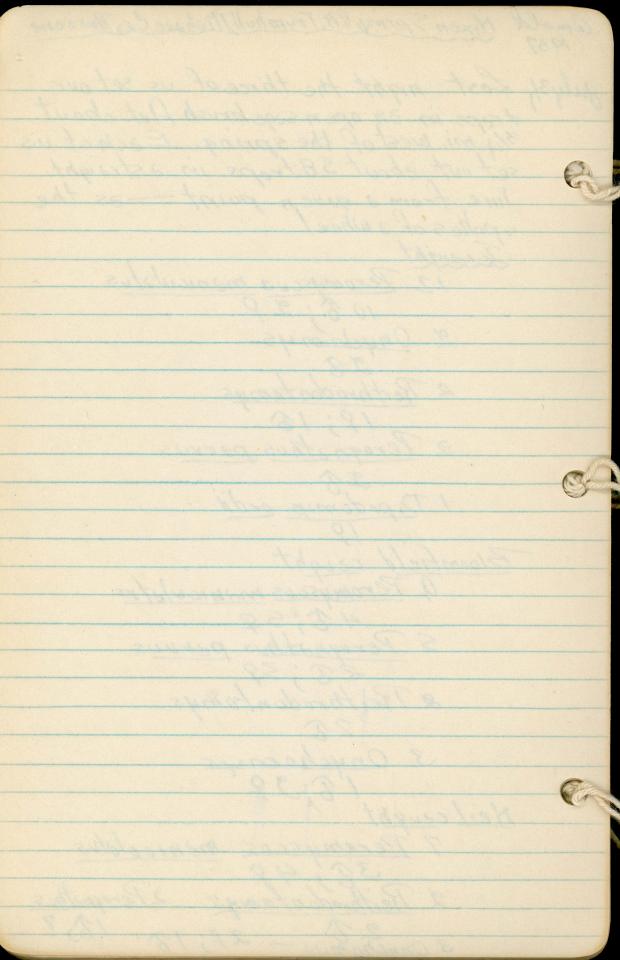
amold 143 p 41 Onych. 1 Field) SigeiBrush 1 1



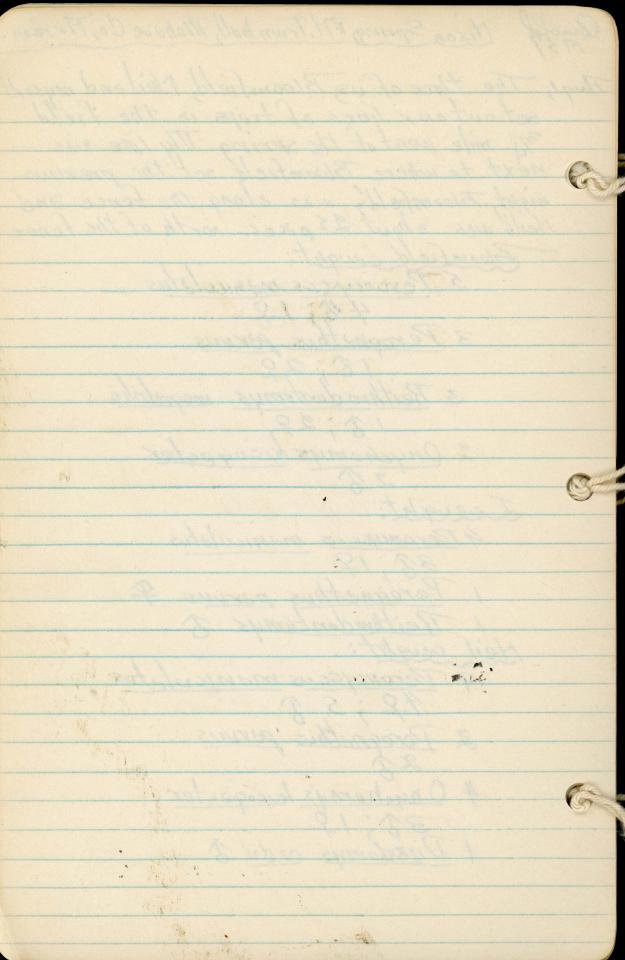
amold Mixon Spring, Mt. Trumhull, Mohove Cas Arizono July 30, good shin can be made up by other methods. In spite of the methods the shing however-are uniform enough so thatthey are usuable and evidentally serve the purpose very well. - This Ill goes to show that there is more than one way to shin ocat. Mejor Goldmen seems to know mammala. The trops they, use are different they any I have ever used. For mice they have Sugler traps with the pan (wire) stroightehed out. These treps are sure death for shything up to the size of 2 wardret. Goldmen eleims that they are legg conspicious than vegular trajos and that even have rains will not spring them. He uses Vinon nuts, hvedo, vollad osts and hird seed for heit. He also uses 2 gort of a bread made out of cornmed and water. This he trys in olrying pan until it firms a hard mass which will stick on the wre very well. He claims that these traps are death on Muratus and shrews in runways as they can not get across the wire without springing the trap. - And once the wire comes diwn the mouse 15 yours. I believe that every trap outfit should have several dozen of these traps in the following page 15 geveral views of the trago.



amold Mixon Spring Mt. Trumhull Thohove Co; Hoszone July31, Lost night the three of us set our treps in an open sage brush flat about 3/4 mi. west of the spring. Each of us set out about 58 traps in a straight line from a given point -as the spokes of a wheel. Licenght 12 Peromyscus maniculatus 108:28 2 Onydomys 28 2 Reithrodontomys 19;18 2 Perognethus parvus Dipodomys ordil Bloomfield czught a Peromysous maniculatus 48;54 5 Perognathus parvus 28;39 2 Rethrodontomys 3 Onychomys 18,29 Heilczught 7 Peromyscus moniculatus 36,49 2. Reithrodonfomys 2 Perognethus 3 Onuchomys - 27; 18



Mixon Spring, Mt. Trumbull, Mohave Co, Hrzens Aug.1, The three of us, Bloomfield, Heiland myself set out our lines of traps in the field 3/4 mile west of the spring. Thy line was next to where Bloomfield set the previous night, Bloomfields, was along the tence and Heil's was about 25 paces north of the fence. Esloomfield cought: 5 Peromyscus maniculatus 46,19 3 rerognathus parvus 3 Reithro dontomys megalolis 18;29 2 Onychomys kucogoster I caught: 4 Peromyseus maniculatus 1 Peroquethus perus & 1 Reithwodontumus & Heil caught: 9 Teromyscus maniculatus 42;5,8 2 Perognathus pervus 4 Onychomys levcogaster 38;12 1 Dijadomys ordii &



Hald Mixon Spring Mt. Trumbull Mohave Co, Arrizono April 2, Last right I set out 16 traps on the side hill north of the camp. I also set 4 Schuylers in a large pile of boulders et the SE corner of the tence about 1/2 mile directly south of the ponda ranchhouse. Eczyht 9 Peromyscus hoylei 348; 89 7 Perunyscus truei 3 Meotome 12 1,2d. 4; 1 mm 7; 1 mm 8 Bloomfield cought: 15 Peromyseus maniculatus 78,87 2 Unychomys 1 Dipodomys ordil 1 mm 9 Meil Cought: 9 Peromy 1005 moniculatus 66;34 5 Perognethus pervus 1 Reithredontomys 1 Teromyseus hogkei

unold 1937 Mixon Spring, Tht. Trumhull, Mohore Co, Arizona

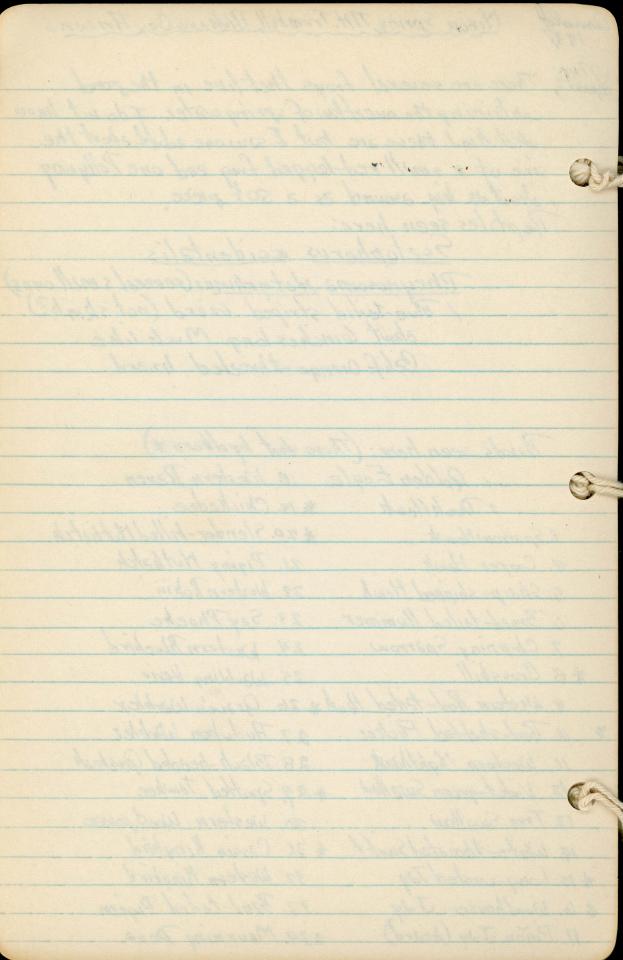
April 2, Out of theouth last night I am saving several specimens of mice as alcoholics.

These are:

3108 Peromyscus hoylei 196-105-24-19 3118 198-104-23-19 3124 188-89-21-20 167+-69+-22-19 3134 truei (?) 191-98-23-20 3147 3158 163-80-21-23 179-91-22-22 3162 Onychomys Bucogester 155-49-22-? 3179 Peromyscus maniculatus 141-61-19-15 3188 319 8 151-66-20-16 " 3202 164-73-20-18 3217 178-80-21-17

The distribution of Peromysous in this region isvery significant. The maniculatus seems to thrive on the open sage flats. At this type of habitat a few-but very tew of the boylei and true i have been trepped. These were probably straggles. Os one pracedes up the slope of the hill he encounters a greates found higher up. At the point of the hill where the slope first begins I found that the hill where the slope first begins I found that the have never cought any Temmysous maniculatus over 25 feet from the level of the point while we have cought a very few of the other two species in Peromysous maniculatus territory (bowlands).

T 18 170-01-24-22 comes hand states in 194 the paint of the wer the hast from the level of the rand while a amold 1937 Yeron Spring Tht. Trumbull, Modave Co, Anzons fruit; There are several frogs that live in the good containing the overflow of spring water. I do not know und hind these are but I saw one adult about the size of a small red-legged frog and one Pollywag ahout as hig around as a sof prece. Reptiles seen here: Scalophorus accidentalis Phrynosoma Matyrhinos (several small ones) / Mue-toiled striped werd (not skink?) about Ginches long. Much like Celif. Orange - throated lizerd. Kirds seen here: (Those shot hyothers *) 1. Golden Edgle 18. Western Raven
2. Duchttauk * 19. Chickadee * 20. Slender- hilled Huthatch 3. Sparrow Hewk 21. Pigmy Muthotch 4. Cooper Howk 5. Sharp-shipped Howh. 22. Western Rohiu 23. Say Phoehe 6. Broad-tailed Hummer 24. Western Bluckird 7. Chipping Sparrow * 8. Crossbill 25 Warbling Kerio 9. Western Red-tailed Howh * 26. Grace's Workler 10. Red-shoffed Plicker 27. Hudukon Warbler 11. Western Mighthaux 28 Black-headed Grostest 12. Violet-green Swallow *29. Spotted Towhere 13. Tree Swallow 30. Western Woodpewee * 31. Cassin Kingbird 14. White-throated Swift * 15. Long-crested Tay 32. Western Kinghird * 16. Woodhouse Jay 73. Bend-tailed Pigeon 11. Pinon Jay (heard) *34, Mourning Pove

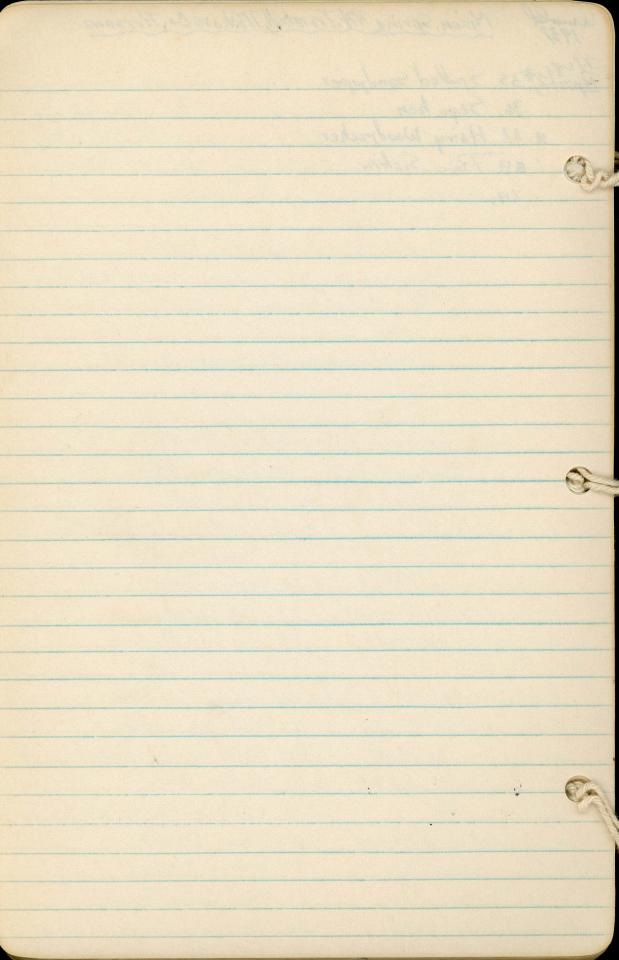


Mixon Spring Mt. Trumbull, Mohave Co. Arrions Hugget 35. Spotled Sandpiper

34. Sign hen

* 37. Hairy Woodpecher

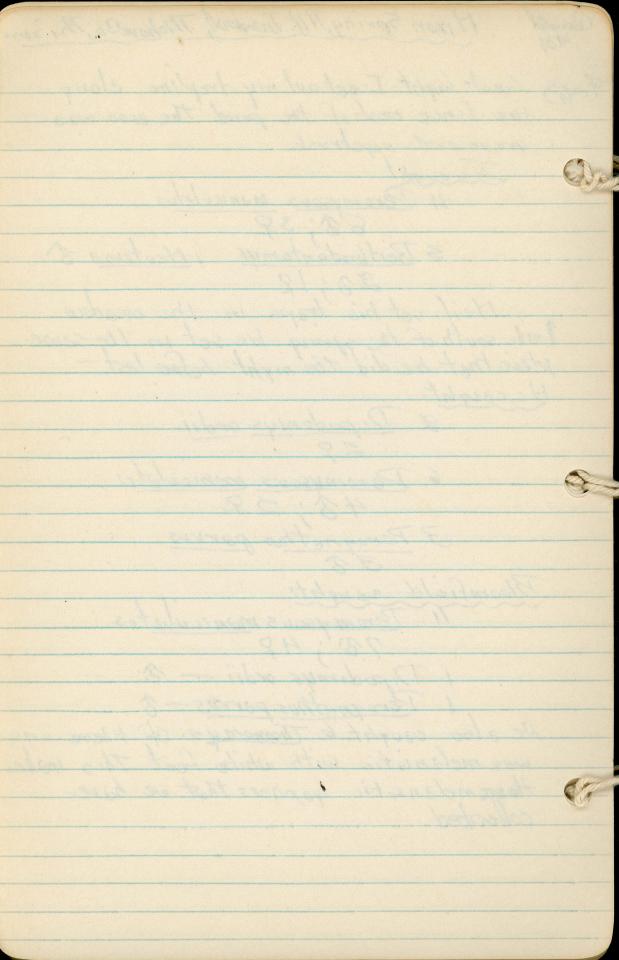
88. Pine Siskin



Mixon Spring, TH. Inmoul, Thohave Co, the zono amold 1931 Aug3, Lest night I set out my trep'ine clong the fence west of the pond, the 2550. was grass and szepvush. I Peromyscus maniculatus 3 Beithrodontomys / Neotoma & Theil set his traps in the meadow

I mile south of the spring. He set in the same

place that he did the night before last. He cought: 2 Dipodomys ordii 6. Peromyscus moniculatus
43;27 3 Perognethus parvus Bloomfield adught:
11 Peromyseus maniculatos
73; 48 1 Dipodomys ordii - 3 He also caught & Thomomys. Of these one was melanistic with white feet. This makes Hopemelenistic gophers that we have collected.



amold Hixon Spring, At. Trumbull Mohove Co, Anzono Flug. 4,193) Lost night Bloomfield and I set our trapline along the road south of compand in a shellow canyon running I to the road chout 34 mile south of the pool. I was trapping along the low worth side of the conjon while Bloomfield was topping along the hottom. Both of the settings were in an association of Kellow Pine, Juniper and sage. Some of the open places on the side of the hill had what appeared to be Rangario rot holes in them. We caught: Bloomfield: 4 Peromyseus meniculatos Myself: 25;29 & Peronyscus meniculatus Peromysous moments

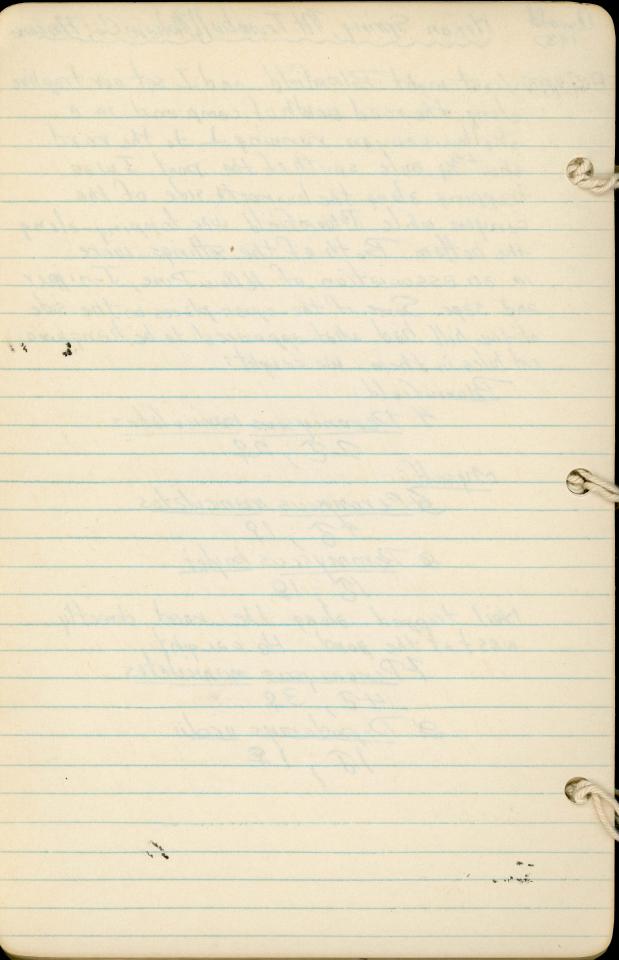
2 Peromysous boylei

18:19

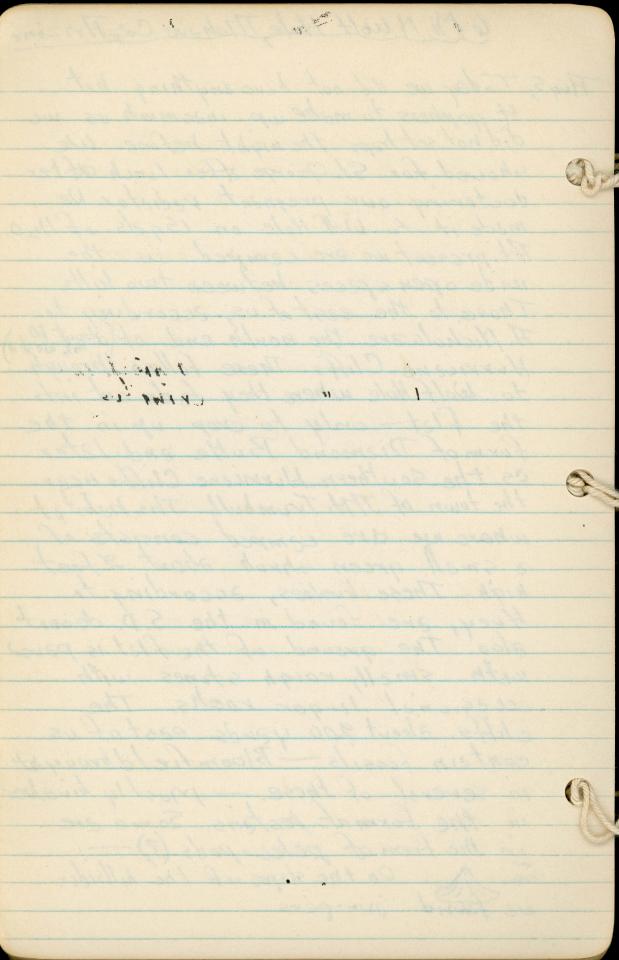
Hoil trepped along the road directly west of the pond. He caught: Throatysous maniculates

48;39

2 Dipodomys ordii 15;17



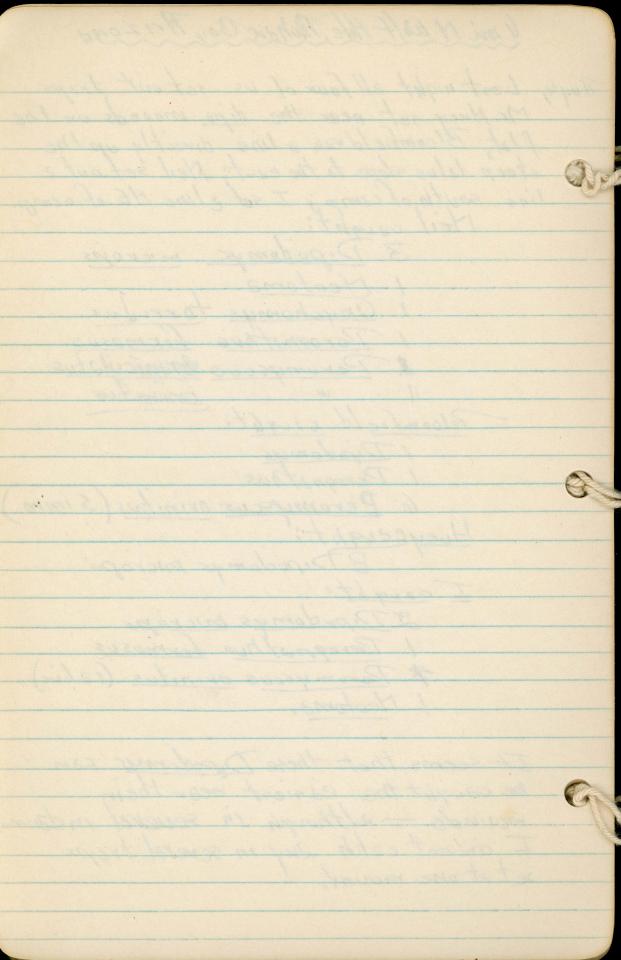
6 Mi. M Wolf Hole, Mahave Con Hrizons Hugs, Today we did not have anything but it gophers to make up inagmuch as we did not set traps the night before. We shoved for St. george efter linch atter ductoring our pregnant vadictor. De made it to wat Hole on 15gds. of Hzo. At present we are camped in the wide open spaces between two hills. Those to the east of us, according to A. Nichols are the north end of about 10 Hurricane Cliffs. These follow through to Wolf Hole where they fade out into the flet - only to crop up in the form of Dirmond Butte and later es the Southern Hurricene Cliffs near the town of 1/1t. Trumbull, the habit it where we are comped consists of a small green shruh about 2 feet high. These hushes, according to Huey, are found in the S.D. desert 2140. The ground of the flet is paved with small, rough stones with occegional larger rocks. The cliffs about 200 years east of us contain fossils - Bloomfield brought in several of these. - Mostly hivelves in the format pectans. Some are in the form of peter o pods (?) we found junipers



I mi It wolf Hole, Thomase Co, Hrizona Augly Last night all four of us set out traps. Mr. Huey set near the dipo mounds on the flat, Bloomfield ran a line directly up the steep telus slope to the east; Heil set out a line south of camp; I set aline HE of camp. Heil caught: 3 Dipodomys microps 1 Meotoma torridus 1 Perognathus formosus A Perunyscus Maniculatus

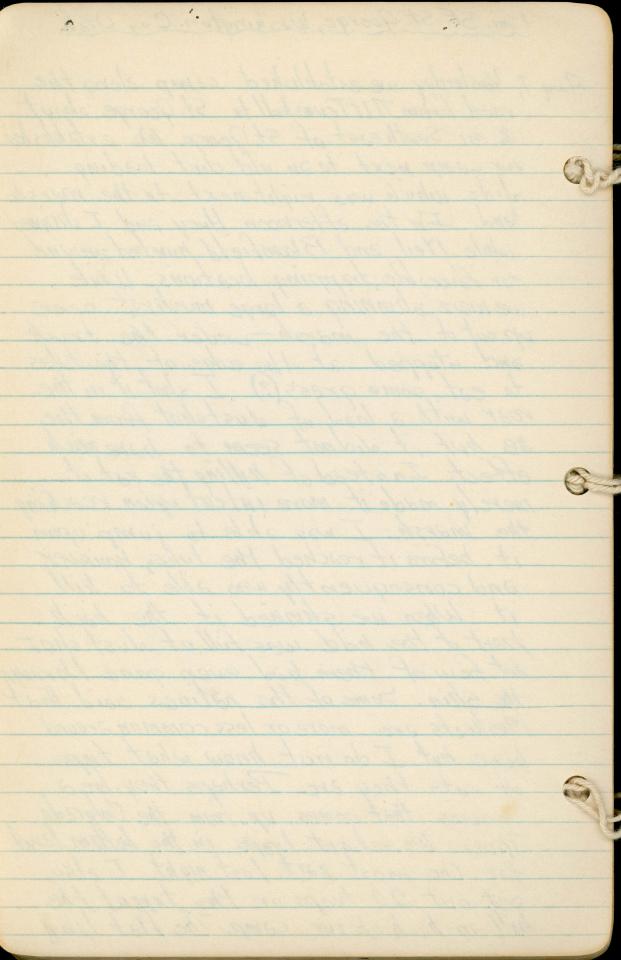
l'' crimitus

Poloomfield caught: 1 Dyrdomys 1 Perognethus 6 Peromyscus ovinitus (5 mm.) Hueyczught: 8 Dipodomys microps I caught: 2 Dipodomys microps 1 Perognathus farmosus & Peramysous orinitus (Ichive) 1 Meotome. It seems that these Dyrodomys can be caught the easiest near their, 9 mounds - although in several instances I didnot cetch any in several traps set at one mound.

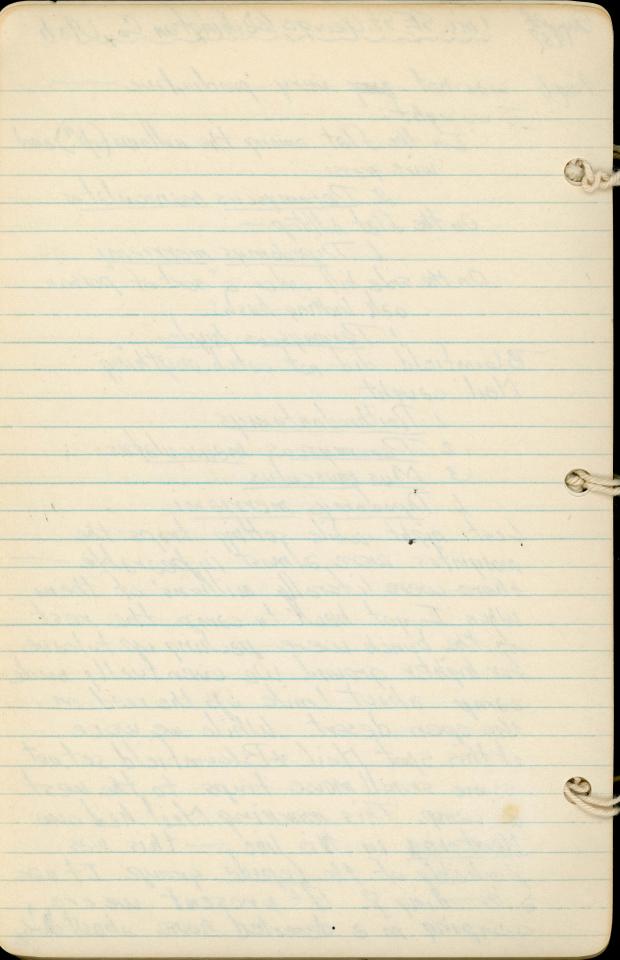


1 mi. SE St. George, Washington Co, Utch

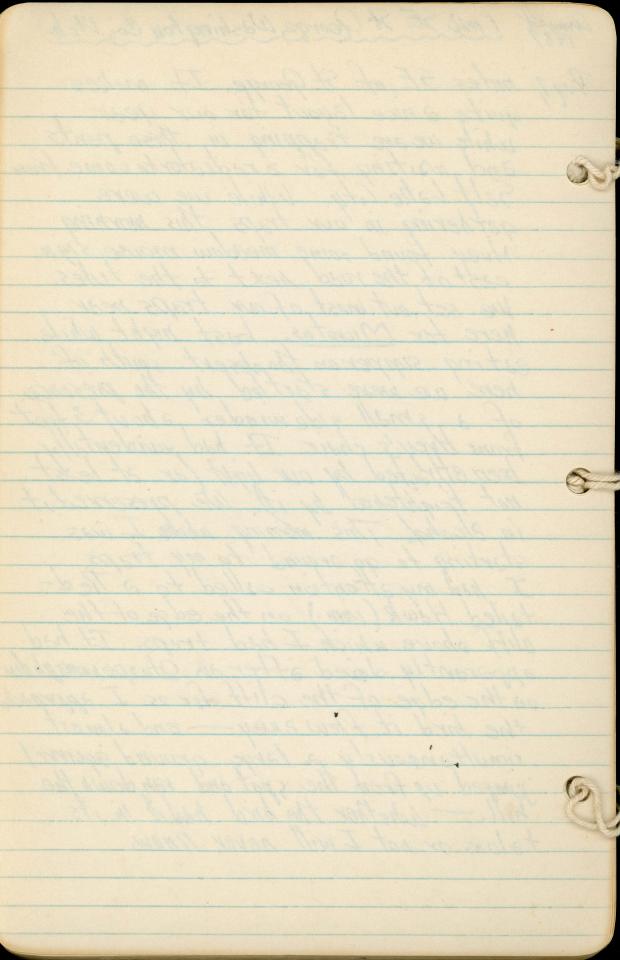
Aug 7, Yesterday we established camp along the road from MITTrum hull to St. George shout 2 mi Southeast of St. George. We established our camp next to an old dirt loading slide which was right next to the myrsh land. In the afternoon Huey and I skings while Iteil and Bloomfield hunted around for fovorable trapping locations, while we were skinning a large mushret came up out of the marsh-under the truck and stopped it the edge of the tulas to est some grass (?). I shot it in the rear with a load of dust shot from the 38 but it did not seem to have much affect. Instead of killing the rat it merely made it more intent upon reaching the marsh. I was able to jump upon it before it resched the tules however, and consequently was able to kill it. When we shinned it the back part at the hidd was full of Just shot but few of them had even gone through the skin. Some of the natives said that Muskrets are more or less common around here but I do not know what type of vets they are. Perhaps they are a River. We set out treps in the bottom land for the most part last night. I also set out 20 treps on the topof the hill in bech of our camp. The flat land



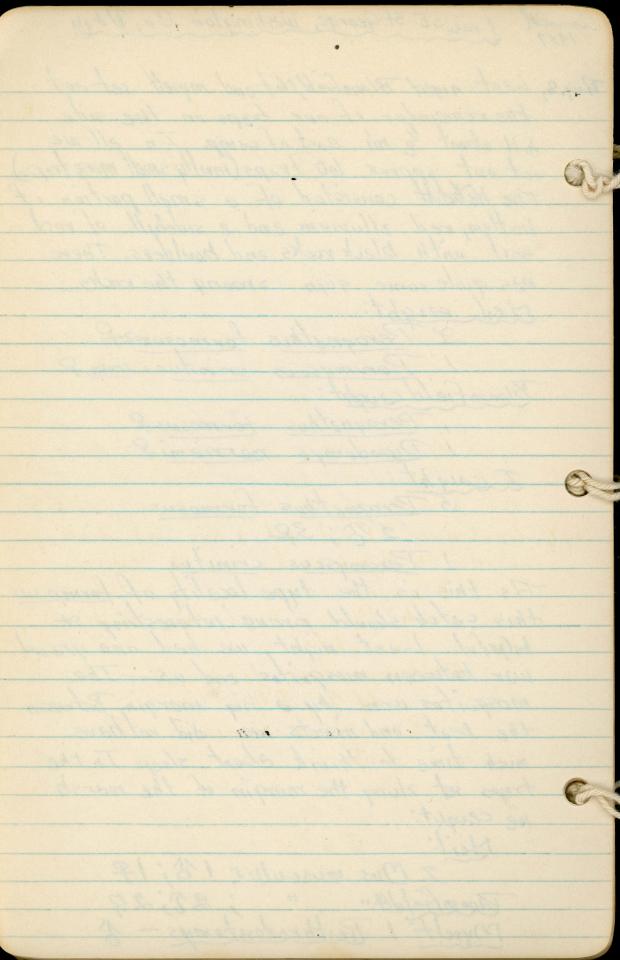
and mi SESt. George Weshington Co, Uteh Augh was not pray very productive — In the flat among the willows (sp. ?) and 2 Peranyscus meniculatus On the flet holltop -On the side hill under a sort of poison och looking bush: Bloomfield did not cotch anything Meil caught: 1 Reithrodontomys 2. Peromyscus, meniculatus 3 Mus musculus ... 1 Dipodomys merriami Lest night while setting traps the mosquitos were almost in pearable when I got hack to comp the rest of the binch were packing up to leave for higher ground, we even tuelly made camp about I mile up the road on the open desert. While we were et this spot Heil &Bloomfield set out some small mouse traps to the west Heatoma in this line—this was probably of the lepide group. It was a breeding & It present we ere camping in a deserted house about de



amold Imb SE St George, Washington Co, Utch. Aug7, miles SE of St. George. It makes guite a nice layout for our gear while we are trapping in these parts and writing for a radiator to come from Self Lake Gty. While we were. gethering in our traps this morning Huey found some meddow mouse sign east of the road next to the tutes. We set out most of our trops near here for Microtus. Last night while esting supper on the desert south of here we were startled by the presence from Hyey's chair. It had evidentally been ettracted by our light for at least not trightened by iff. We preserved it in alcohol. This morning where I was starting to go around to my traps I had my attention as led to a Tredtailed Howk (Imm.) on the edge of the cliff shove which I had traps. It had apparently doed after an Otospennaphilus on the edge of the clift for 25 I approached the hird it flew every - and almost simultangously a large ground agunrel jumped up from the spot and van down the hill. - whether the bird had it in its talons or not I will never know.



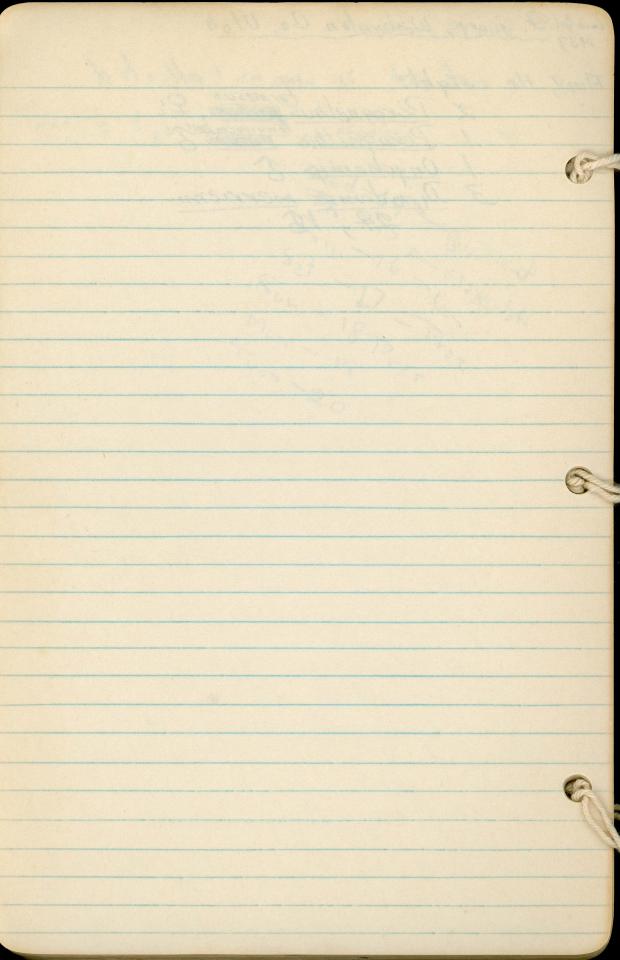
amold Imi. SE St. George, Washington Co, Htch Aug. 8, Lest night Bloomfield, Net and myself set out the remainder of our trops on the side will about & mi. east of camp. In all we set out approx 60 traps (mostly small move traps) The habitat consisted of a small portion of notion, red alluvium and a sidehill of red soil with black rocks and houlders. There Meil cright: Bloomfield cought: Perognathus formosus & Dipodomys merriami ? Icaught: 5 Peroquethus formosus 26;39 1 Peromyscus crinitus 775 this is the type locality of formosus this cetch should prove interesting + helpful. Lest night, we had one grand war hetween musquitos and us. - The mosquitos won by a hig margin. Between the heat and inects we did not have much time to think about sleep. In the treps set along the morgin of the morsh we crught: 2 Mus musculus: 18; 14
Bleomfield!4" "; 22; 24
Myself: 1 Resthrodontomys - 8



St. George Washington Co. Htch anold 1937 Huey caught a & Mushrat in a Hug8, Il trop set in a side channel from the marsh land. It drowned itself by trying to swim with the horse shoe effeched to the trop. Evidentally, the sign which he thought to be Microtus was inche by Mus musculus for the most part. The type of ground, cover, and moisture content, however, were much the same es where biscrotus would be found. In my opinion, however, it, the Microtes found here is in the montanus group they should probably be found in more distinit vinueys, 25 the celifornicis rether than in the type of behitet that the longiczious group would be expected. Augg, Lest night I set out a line of so traps among the black rocks on the hillside east of where we are camped. There was much Peroquethus sign among the rocks. I caught: 10 Perognathus formosus 43;69. Blamfield set in the sometype of habitet and cought: Heil set his trops clong the flet east of comp. The bushes were quite for opert and the soil was brick red.

to de mount of the de. Andrew Agency and the second of the second o 15 3/2 Rend 17 CE 295 Sept 17 CE 295 Sept Set. Wen 18 Drer Tues 20

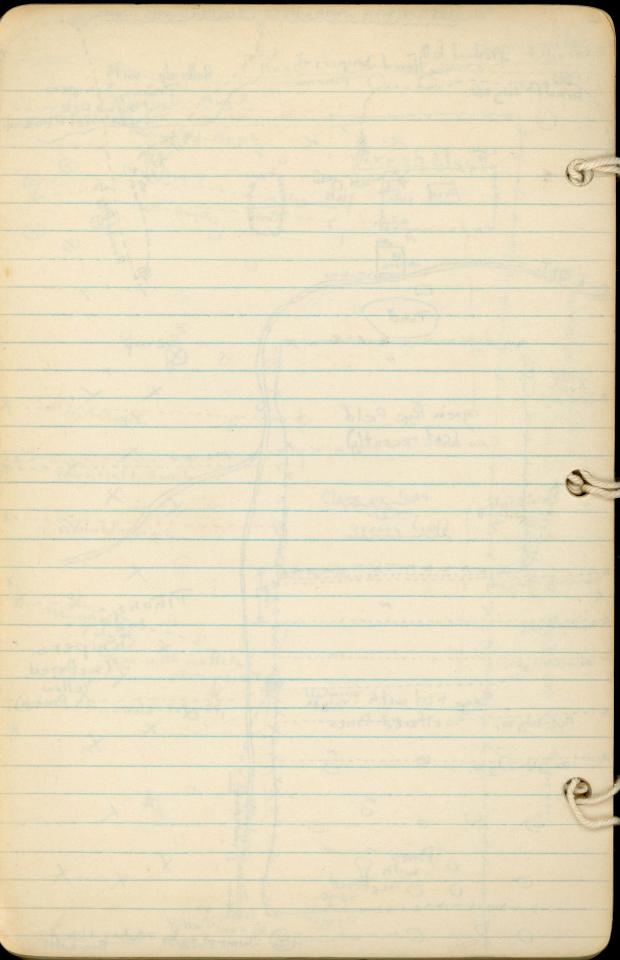
andel St. George, Washington Co, Utch Aug.9, He coughto 2 Perognathus permosus 1 Perognathus permont 1 Onychomys 8 3 Dipodomys merriemi 29; 18



TRAPLINE MAPPINGS

UPEN FIELD ABOUT I MILE IDEST OF CAMP SHOWING TRAPLINES Spring water hole Roed Imi. Bloomfield - Aug. 3 Bloomfield-1749.2 4 0 1 X 0 0 here 0 X Bloom Klas N X 0 Sige = 0 gress + low u u Yellow Pine = & Pinon = 图

AREA MEAR CAMP WHERE TRAPPING WAS DONE Gradual hill Fred Junipers + Hillside with Arnol 2 July 20 Pinons, Junipers and Scrub Ock -Occesion of Menzande Open Rye Field (cut recently) Pinons Junipers (settered Vellow (Pines) Sege Flet with Bloom Meil-July 30, - Scattered-Pines Clump of rocts 2 Meetome - 1 Otosp. - Hug. 2,431



Verious associations-North Slope from Camp P. true 1 ++++ P. howleit+++
evtemizs++ P. r. -Otospermophilus - wherever sofficient cover + Provable conditions Bets-Imptis collected

weiter consequence of the second

